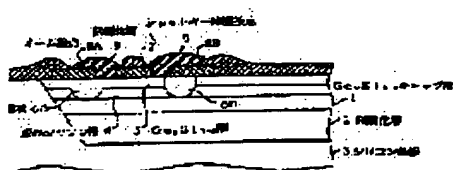


(54) SEMICONDUCTOR DEVICE AND PRODUCING METHOD THEREFOR



(57)Abstract:

PURPOSE: To grow a large area hetero body structure of hierarchized $GexSi_{1-x}$ alloy having a low-level threading transfer defect on silicon by growing germanium-silicon alloy at a high temperature and increasing the germanium component with a gradient more than a specified value.

CONSTITUTION: A silicon substrate 3 is prepared. The substrate is a sort of standard (100) direction silicon wafer generally used for producing an integrated circuit. A large area hierarchized layer 2 of germanium-silicon alloy $GexSi_{1-x}$ is grown on the silicon substrate 3 at a high temperature. A growing process is chemical vapor deposition(CVD) or molecular beam epitaxy(MBE). A substrate growth starting temperature is in a range of 850 to 1100°C. Thus, the area of hierarchized alloy exceeds 1200 micrometer². The start composition is preferably pure silicon. The germanium forms $GexSi_{1-x}$ with the gradient less than about 25%/micron.

LEGAL STATUS

[Date of request for examination]

02.04.1993

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

2792785

[Date of registration]

19.06.1998

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]